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ABSTRACT

Immigrant Selection and Short-Term Labour Market Outcomes by Visa Category*

This paper studies the efficacy of immigrant selection based on skill requirements in the Canadian context. The point system results in a much higher skill level than would otherwise be achieved by family preferences. This positive selection is achieved by directly selecting higher skilled principal applicants who are assessed by the point system and also indirectly through higher skilled spouses. However, due to difficulties in transfer of foreign human capital immigrants admitted for their skills do not necessarily perform better in the labour market and important factors used to assess admissibility have very limited power to predict short-term labour market success.

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1. Introduction

Immigrant receiving countries grant visas for permanent residence based on family ties, skill requirements or humanitarian grounds. The allocation of visas across these alternative categories varies considerably across countries.

Family reunification is the cornerstone of the immigration policy in the US with majority of immigrants being admitted based on family ties (64 % of all immigrants that arrived in 2001) that is followed by employment preferences (17 %)[1]. Among the stock of immigrants in Germany in 2002 42.8 % arrived through family reunion, 16.3 % under skill requirements, while in Denmark in 2001 48.2 % arrived through kinship and 5.7 % arrived under skill requirements [2]. Other immigrant receiving countries such as Canada and Australia, on the other hand, admit a much larger fraction of their immigrants based on skill requirements. During 2000-01 period in Canada about 66 % of immigrants were admitted under skill requirements and 27 % under family class. During the same period in Australia 51 % of immigrants were admitted based on skill requirements and 36 % under family ties[3].

In immigrant receiving countries there is much debate about what fraction of immigrants should be admitted under each category and which factors should determine eligibility. Although specific rules change considerably over time, both in Canada and Australia eligibility of immigrants based on skill requirements has been determined by a number of individual characteristics including age, education, experience, and language ability among others. In Canada this selection mechanism, called the point system, was introduced during late 1960s for selecting immigrants under skilled worker and business class categories[4],[5]. Canadian immigration laws also permit permanent residents or Canadian citizens to sponsor their family members (spouses, common-law partners, dependant or adopted children, parents and grandparents) as immigrants under family class as long as sponsors are 18 years of age or older, live in Canada and meet income requirements. Eligibility of these immigrants depends strictly on kinship ties independent of any skill requirements. Similar provisions exist in other immigrants receiving countries such as the US and Australia.

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[1] Legal Immigration, Fiscal Year 2001, Annual Report, US Department of Justice (August 2002).
[2] Constant and Zimmermann (2005b).
[3] Migration program Statistics, Department of Immigration and Multicultural Affairs, Australian Government.
[4] United Kingdom recently adopted a point system similar to that of Canada while there are ongoing discussions for introducing a similar system throughout the European Union and the US.
[5] See Appendix I for details of the Canadian point system.

The rationale for the skill based selection mechanisms is to admit immigrants that can adapt to the labour market relatively easily and also help meet perceived demands for certain skill sets in the economy. Two important issues arise for assessing the efficacy of such selection mechanisms. First, do these mechanisms generate a higher skilled immigrant flow and, if so, through which channels these outcomes are achieved. Second, how do immigrants that are selected based on skill requirements fare in the labour market compared to other immigrants. Comparison between skill based immigrants and those in family class is the most interesting since both historically and in ongoing discussions of potential policy changes the trade off has been between these two visa categories.

Human capital characteristics play a dominant role in selection decisions of skilled based immigrants. Therefore, a higher observable skill level, usually measured by years of schooling, is expected among this group than would otherwise be achieved through mainly family preferences. In terms of unobserved characteristics, however, it is not clear which group will have more favourable characteristics since these are primarily determined by self-selection among immigrants.

The performance of immigrants admitted under different visa categories in the host country labour market depends on skill levels and transferability of these skills. Family class migrants have access to family networks in the host country which facilitates access to crucial information regarding destination country labour market. This may allow them base their decisions for migration on more reliable information and also may initiate investments in human capital prior to arrival that are valued in host country labour market. These types of networks may also help overcome barriers in the labour market through job contacts or better knowledge of processes leading to recognition of credentials. Skilled workers have much less access to these networks both prior to and following migration and their higher observable skill levels means that they are more likely to face skill transferability problems. Therefore, although government authorities aim a higher level of employability among skill based immigrants, a priori it is not clear which group will have better initial outcomes and how these initial differences may evolve over time[6].

This study addresses differences in observable skills across visa types and how these differences affect economic performance in the short-run. A new data set, the Longitudinal Survey of Immigrants to Canada (LSIC), that recently became available in Canada is used for this purpose. LSIC is a unique

[6] Jasso and Rosenzweig (1995) also point out that in the US context, where employment based immigrants are nominated by employers, employers may screen for short-term productivity while family members may screen for the long-term. In Canadian context employer screening is much less relevant since skilled based immigrants can apply on their own without a requirement of a job offer.

data set with information on visa categories, a rich set of individual characteristics, and short-term labour market outcomes. Using this novel data set this paper has three main contributions to the literature. First, it is shown that the point system generates a much higher skilled immigrant flow than those admitted under family preferences. The main mechanism that generates this outcome is the selection of higher skilled individuals within countries of origin rather than a shift in country of origin distribution towards those with higher mean skill levels. Second, in addition to directly changing the skill distribution by selecting higher skilled principal applicants, the point system has an indirect effect on spouses' skill distribution resulting in more educated spouses due to positive assortative matching. Third, favourable selection in human capital characteristics do not always translate into better labour market outcomes. This is because many of these characteristics, such as schooling and experience that are almost all acquired in source countries, have little or no return in the host country labour market and, hence, have very limited power in predicting short term labour market outcomes.

The remainder of the paper is organized as follows. Following a review of the previous literature and discussion of data in Sections 2 and 3, Section 4 of the paper addresses selection across visa classes. Section 5 analyzes labour market outcomes, measured at 6 months and 2 years after arrival, focusing on labour force participation, employment and earnings. The results stress that conclusions regarding relative performance of immigrants across visa classes differ across these margins. Finally, Section 6 summarizes the main findings of the analysis.

2. Previous Research

There are several studies providing evidence on the relative success of immigrants admitted under different visa categories. Jasso and Rosenzweig (1995) find that based on their occupations skilled immigrants appear more favourably selected than immigrants entering as spouses of US citizens. For Australia, Chiswick and Miller (1992) and Wooden (1990) conclude that refugees have more difficulties in finding employment than other immigrants. These studies also report that the gap between groups narrows over time. Cobb-Clark (2000) finds that immigrants selected for their skills have higher labour force participation and employment rates six months after arrival in Australia. The differences in participation rates persist while that in employment rates dissipates by 18 months after arrival. Constant and Zimmermann (2005a) find that in Germany former refugees and those that arrive through family reunification are less likely to work full-time compared to those who came through the employment channel. In Danish context, however, they find that the legal status at entry does not play

any significant role. In a companion paper focusing on earnings, Constant and Zimmermann (2005b) find that arriving through family reunion or as asylum seekers or refugees has negative effects in both Germany and Denmark and legal status at entry have long lasting effects.

The Canadian point system also received a lot of attention in discussions of immigration policy but there is little direct evidence regarding its impact on immigrant characteristics and outcomes. Duleep and Regets (1992) and Borjas (1993) compare US and Canadian immigrants using Census data and refer to the point system as a potential source of differences in immigrant characteristics between these countries. Both studies stress that the educational attainment of immigrants in Canada and the US from same source countries are very similar to each other. Borjas (1993) notes that since late 1960s, following the introduction of the point system, Canada attracted a more educated immigrant flow relative to the US. The paper concludes that the point system alters the national-origin mix of the immigrant flow towards countries with higher average skills rather than attracting more skilled workers from a particular source country. Census data used by above studies for US-Canada comparisons have no information on visa category and therefore only allows an assessment of the differences across host countries in average skill levels. Across country variation in skill levels is a function of both the attractiveness of the host countries for potential immigrants (i.e. who applies) and the selection processes (i.e. who is admitted) (Aydemir, 2006)[7]. Therefore, in order to attribute skill differentials across countries to immigration policy differences one needs to assume that these countries would attract immigrants with similar skill levels under the same set of immigration rules. As opposed to the previous studies comparing immigrant characteristics across host countries, this study focuses on a single host country and analyzes variation in immigrant skills across visa types.

Only evidence on the impact of the Canadian point system on immigrant outcomes is by De Silva (1997) that examines earnings of skilled immigrants in Canada compared to assisted relatives and refugees. The author using Immigration Data Base (IMDB) finds that latter groups have lower annual earnings but over time this gap gets smaller. Importantly, the study also finds that controlling for immigrant characteristics accounts for only a small portion of the earnings differential among the various classes.

3. Data

[7] Aydemir (2006) discusses the role of economic opportunities and the immigration policy on resulting immigrant characteristics. Using a sample of immigrants to Canada a positive selection is found at the application stage among individuals from UK but a negative selection among those from the US.

Longitudinal Survey of Immigrants to Canada (LSIC) is a survey of immigrants aged 15 years and older, who applied through a Canadian Mission Abroad, landed from abroad, and arrived in Canada between October 2000 and September 2001[8]. This study uses Wave 2 of the LSIC that surveyed around 9000 immigrants approximately two years after arrival. LSIC Wave 2 also provides information from a previous interview (Wave 1) that took place approximately six months after arrival providing a longitudinal feature. In the survey one person per immigrant family was interviewed but the survey also asked questions about the spouse of the person interviewed.

LSIC data contains rich information on education, training, labour market experience, language and most importantly the visa category of immigrants. Five visa categories can be identified: family class, skilled worker class, business class, refugee class and provincial nominees. Skilled workers are admitted under skill requirements and go through a points test. Business class immigrants are required to make investments in Canada. In addition to the financial requirements they are subject to a relaxed points test. Family class and refugee class immigrants are not subject to the points test and are admitted based on family ties and humanitarian grounds respectively. The number of observations for the last group, provincial nominees, is too small to analyze separately and this last group (0.7 % of all immigrants) is excluded from the analysis.

Table 1 presents the visa category distribution of immigrants in the LSIC sample. About 61 % of immigrants in the sample, age 15 and over, were skilled worker class followed by 27 % family class, 6 % business class, and 7 % refugees. When the sample is restricted to adult working age population, those 25 to 65 years old by the time of second interview, the fraction of skilled workers increases to 69 % while those in family class is about 20 %. Combining business class and skilled worker class, around 3 in 4 immigrants were admitted through visas subject to skill requirements. For Canada this marks historically one of the highest fractions over the 1980-2004 period.

For family class immigrants, regulations require a "close relative" such as a spouse, a child or a grandchild to be living in Canada who is willing to sponsor. Among the family class in the data, aged 25 to 65, 62 % were admitted as spouses or fiancé, 35 % as parents or grandparents, and 3 % as other

[8] "Landing" refers to the process of permanent residency taking effect. For an individual residing outside Canada this occurs when the individual arrives in Canada through a Port of Entry. Generally, all applications for permanent residence must be made through Canadian missions abroad. Exceptional cases that are allowed to apply and become permanent residents while residing in Canada and are not required to leave and re-enter the country for landing are excluded from the LSIC sampling frame. These exceptions are discussed in more detail in Section 5.

family members of the sponsor[9]. Among skilled workers, on the other hand, 37 % indicated they had a relative (not necessarily a close relative) already living in Canada when they arrived. Above numbers show that while all family class immigrants had a family network in Canada when they arrived in the country, skilled workers were much less likely to have access to a similar network[10].

When a family applies for migration the family designates one of the individuals as the principal applicant and the remaining family members are called dependants. LSIC data provides the principal applicant information. In the case of skilled workers, principal applicant refers to the person who is assessed by the points test based on individual characteristics and the decision for the dependants rests on this assessment. Human capital characteristics of the skilled worker dependants are not assessed by the points test. In the LSIC sample of 25-65 year olds the fraction of principal applicants among male skilled worker and business class immigrants is around 0.87 and 0.90 respectively, while among females the corresponding fractions are 0.33 and 0.15. Previous literature emphasized that among skilled workers only principal applicants are assessed and Cobb-Clark (2000), for example, restricts the analysis to the principal applicants. There may be, however, some association between skills of spouses due to positive assortative matching in the marital market. Therefore, this study includes both principal applicants and dependants to see if any of the selection patterns among principal applicants also carries over to the spouses.

The sample in the rest of the analysis is restricted to adult working age population. The analysis is carried out separately by gender highlighting differences between males and females, and by principal applicant status showing differences between principal applicants and their dependants.

4. Selection Across Visa Categories

4.1 Education and Language Ability Differentials

Educational attainment has been historically one of the main factors in the point system and the selection grid applicable to the cohort in this study allocated 16 points for education out of a maximum of 100 points. The pass mark was 70 points for skilled workers while it ranged between 25 to 40 points for business class (provided they satisfy other investment related requirements). Given the

[9] Those applying under family class may be sponsored either by immigrants or native-born Canadians but the data doesn't provide this information.

[10] As long as the applicant is eligible for sponsorship under family class there is no incentive to apply as a skilled worker which requires passing strict selection criteria. Those immigrated as skilled workers although they had relatives in Canada were most likely ineligible for family sponsorship.

lower pass mark, the impact of selection on resulting education levels is expected to be smaller among business class compared to skilled workers[11].

Table 2 Panel A presents the educational distribution across visa categories using separate questions in the survey for the highest educational attainment and years of schooling. The results, based on the 6 month interview, are for the pooled sample of principal applicants and their dependants where dependants are assigned to the visa class of the principal applicant. Average years of schooling presented in the last row of the table shows that skilled workers have the highest schooling among both males and females followed by business class immigrants. Compared to family class immigrants the schooling differential for skilled workers is 3.9 years among males and 3.4 years among females. Although most females are not principal applicants this large education differential is noteworthy. Among males, interestingly, refugees have slightly higher education than family class although the difference is not statistically significant while among females refugees are the least educated group. In terms of the highest educational attainment, 87 % of male skilled workers has a Bachelor's degree or above, while 50 % of business class, 31 % of family class and 24 % of refugees have this level of education. In other words, a male skilled worker class immigrant is almost three times more likely to hold a university degree than a family class immigrant. Similar differentials are also observed among females. These results clearly show that the level of education among immigrants admitted through skill requirements is much higher than other immigrants.

Language ability is another factor important in immigrant integration context and also one of the factors assessed by the point system. Points are awarded for each of the speaking, writing and reading abilities in the official languages of English and French accounting for a total of 15 points in the selection grid. As opposed to most data sets that only asks general ability in language, LSIC asked detailed questions about English and French language ability in speaking, writing and reading. This information is unique not only because it relates to the selection grid but also because certain dimensions of language ability may be more important in the labour market integration of immigrants than others. For example, speaking ability may be more important in getting jobs if employers screen applicants on this dimension either because on average jobs are more likely to be intensive in oral communication or if poor speaking ability is regarded as a negative signal about the worker ability.

[11] Applications for immigration under any visa type include an on paper assessment of the information provided, as well as, an in person interview regarding the application. Upon request applicants are required to submit original or certified documents regarding their education levels. Also, during the interview process visa officers assess stated language proficiencies (Source: Applying for permanent residence in Canada: A self-assessment guide for independent applicants, Citizenship and Immigration Canada).

Table 2 Panel B presents fraction of immigrants with 'high' language ability, i.e. those who report their language skills being well, very well or report the language to be their mother tongue[12]. Male skilled workers report higher language ability in both official languages in all three dimensions relative to the family class immigrants. Male business class, family class immigrants and refugees on the other hand have similar language abilities. Among females skilled worker class immigrants, similar to their male counterparts, report higher language ability than family class immigrants. Female business and refugee class immigrants on the other hand have lower language abilities. These results show that skilled worker class immigrants not only have higher educational attainment but also report having higher language abilities.

4.2 Within and Across Country Components of Skill Differentials

Above differentials may be due to differences in national-origin composition of immigrants across visa categories or within source countries the point system may be selecting higher skilled immigrants. Understanding which of these factors is primarily driving the differentials is important for policy as shifts in country of origin distribution may have different implications on average skills of immigrants under each scenario. Given the subjective nature of language ability question and space limitations the paper focuses on schooling outcomes in this section to address this issue.

Small sample size doesn't allow an analysis by country of origin, therefore, individuals are aggregated into national-origin groups and the analysis is restricted to those in either family or skilled worker classes. For each national-origin group j let the mean education level be S_{ij} in visa class i. The mean education level for visa class i is then a weighted average of S_{ij} over N national-origin groups such that $S_i = \sum_{j=1}^{N} p_{ij} S_{ij}$ where p_{ij} is the fraction of immigrants from national origin group j in visa class i. Let S_s and S_f be the average years of schooling among skilled workers and family class immigrants respectively. Then the difference in years of schooling between these two classes can be decomposed into two components using the following form:

$$S_s - S_f = (X_s - X_f)\beta_f + X_s(\beta_s - \beta_f) \qquad (1)$$

[12] The remaining group consists of individuals who responded that their skills are fairly well, poor or cannot speak the language. Language abilities refer to those reported at the six month interview.

where X_s and X_f reflect the source country distribution in each visa class. The Nx1 vector of coefficients β_s is the vector of average schooling levels across national-origin groups among skilled workers (where row β_{ij} is equivalent to S_{ij} as defined above); β_f is the corresponding vector for family class immigrants. The first term on the right hand side of equation (1) refers to the schooling differential that is due to the differences in national-origin composition of immigrants. This term is called "across differential" in Table 3 where results from this Oaxaca decomposition of the schooling differentials are presented. The second term on the right hand side, called "within differential", is the differential between family and skilled worker classes that is due to a different selection of immigrants within national-origin groups. Within national-origin group j a more favourable selection of skilled workers relative to family class occurs when $\beta_{sj} > \beta_{fj}$.

The decomposition is carried out separately for males and females using 11 national-origin groups[13]. The results in Table 3 Panel A show that for both males and females over 90 % of the schooling differential between skilled worker and family class immigrants is due to differences within national-origin groups and less than 10 % is due to differences in national-origin composition across the two classes. Within national-origin groups country of origin compositions may be different across classes. Therefore, the same decomposition is carried out using a subset of countries of origin with large sample sizes and the results are presented in the last column of Panel A providing similar conclusions[14]. Panels B and C also carry out the same decomposition separately for principal applicants and dependants and the results are very similar to those in Panel A.

These results provide strong evidence that the point system generates a higher skilled immigrant flow primarily by selecting more skilled immigrants within-countries of origin rather than changing the country of origin composition[15]. This has important implications for understanding the role of the

[13] These national-origin groups referring to broad regions of origin are dictated by the sample size. The 11 national-origin groups are North America, Central and South America, Caribbean and Bermuda, Western and Northern Europe, Eastern Europe, Southern Europe, Africa, West and Central Asia and Middle East, Eastern Asia, Southeast Asia and Oceania, Southern Asia.

[14] For this decomposition countries of origin with a minimum of 100 observations are selected and 7 of them satisfy this restriction. The mean number of observations per country is 515 observations, and the mean number of family class immigrants and skilled worker immigrants used to calculate S_{ij} are 142 and 326 respectively. The sub sample of 7 countries makes up 60 percent of all family class immigrants and 56 percent of all skilled worker immigrants. These 7 countries are United Kingdom, Iran, China, Philippines, India, Pakistan and Sri Lanka. Male and female immigrants are pooled together for sample size considerations.

[15] Note that Borjas (1993) focuses on the stock of immigrants who arrived starting from 1960s until 1981 while this paper focuses on a cohort that arrived over 2000-01. Over time both the importance of education in determining

point system and the economic opportunities in host countries in generating across country variation in immigrant skills. For example, while among the immigrant stock in 2000-2001 average schooling levels within national-origin groups were in general higher in Canada relative to the US by about one year, for some source regions such as Asia and Europe immigrants in the US had higher skill levels (Aydemir and Sweetman, 2007). This points out that US could generate schooling levels among its immigrants close to or even higher than Canada without a point system and with its much larger emphasis on family reunification. This may be due to better economic opportunities in the US relative to Canada and underlines the importance of economic opportunities in host countries for generating high skill immigrant flows in addition to designing policies for selecting high skill immigrants.

4.3 Selection among Principal Applicants and Spouses

Results in Table 2 show that skilled worker males have 3.9 years more schooling than family class immigrants and for females, although slightly lower, a remarkable 3.4 years differential exists. The similarity of the results for males and females is remarkable because while close to 90 % of skilled worker males are principal applicants (PA), hence are assessed by the point system, only about 30 % of females are PAs yet they have very favourable characteristics as well. Selection among PAs and spouses is addressed in this section after restricting the sample to PAs and the spouses of PAs, leaving out a very small number of "other dependants"[16], [17].

Table 4 presents educational levels among PAs and spouses. First, this table shows that in general immigrants selected for their skills, skilled workers or business class, have higher educational attainment than family class among both PAs and spouses. For example, male skilled worker PAs have over 4 years more schooling than male family class PAs. Interestingly the differential between

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eligibility in the point system and the source country distribution of immigrants have changed considerably. These differences may explain different conclusions regarding the role of the point system.

[16] Among the 25-65 year olds about 66.6 % of the respondents are principal applicants, 32.7 % are spouses of principal applicants and about 0.7 % are dependants other than a spouse.

[17] The sample size for spouses of PAs is very small for some gender and visa category groups. In order to boost the sample size for this group to reduce sampling error and to provide a more comprehensive picture of education within families, the questions in the survey about spousal education levels are utilized. Therefore, information in Panel B of Table 4 is obtained either from a survey respondent who is a spouse of a PA reporting his/her own education level or from a survey respondent who is a PA providing information about his/her spouse. The survey doesn't report whether the spouse is an immigrant or a Canadian-born, thus, especially for the family class there is a possibility that the spouse is Canadian-born. When I use only the education info about respondents but not their dependants the results are very similar for all visa categories but the family class whose education levels become significantly lower. All qualitative results, however, remain the same. Also note that while survey respondents report both their highest educational attainment and years of schooling, they were only asked about the highest educational attainment of spouse but not the years of schooling. I assume that mean years of schooling for a given level of educational attainment is the same between survey respondents and their spouses.

these two classes is larger among spouses than PAs with almost 5 years difference. Second, within the skilled worker class, spouses have lower education than PAs for both males and females which suggests that within families higher educated spouses become PAs to increase the likelihood of passing the points test. This is not observed for other visa categories which is consistent with the fact that education has much less/no role in admission decisions.

The fact that not only PAs admitted under skill requirements but also their spouses have more favourable characteristics than the corresponding groups in the family class may be a result of positive assortative matching in the marital market leading to a positive correlation between skill levels of spouses. Table 5 investigates this correlation by presenting, for a given level of educational attainment of PAs, fraction of PAs married to a spouse with equal or higher educational attainment. The results show large variation in this fraction across classes with skilled worker PAs having the highest fraction. For example, in Panel A among PAs with a BA degree 67 % of skilled workers are married to a spouse with the same or higher educational attainment while among family class this is 53 %, a difference of 14 percentage points.

There is some variation in mean age and region of origin composition across classes as shown in Appendix Table A.1 which may contribute to the education differences among spouses across visa classes. In order to make comparisons across more homogenous groups Panel B of the Table 5 restricts the age to 25-45 that eliminates most of the difference in mean age between skilled workers and family class and panel C further restricts the sample to those from Asia[18]. Results from these last two panels provide the same conclusion that positive assortative matching is strongest among the skilled workers. Therefore, not only skilled worker PAs are more educated, hence their spouses are likely to be more educated, but also conditional on the educational attainment of PAs skilled worker PAs have the most highly educated spouses. Hence, Tables 4 and 5 show that point system has a direct effect that results in selection of PAs with more favourable characteristics, and also an indirect effect that creates a more favourable selection of spouses.

The results in Panels B and C in Table 5 also show an interesting pattern where the positive sorting among skilled worker class spouses relative to the family class gets much stronger as the PAs' education level increases. In Panel B among high school graduates, skilled worker PAs are only 1 % more likely than family class PAs to have a spouse with equal or higher educational attainment. This

[18] Asia is the only source region with large enough sample sizes where reliable comparisons can be made between skilled workers and family class immigrants by educational attainment.

probability increases to 2.6 % among those with some post secondary education, 19.6 % among Bachelor's degree holders and 40.7 % among those with post-graduate degrees.

The next section addresses to what extent these differences in observed characteristics across visa classes affect labour market outcomes in the short run.

5. Short-term Labour Market Outcomes

This section analyzes differences in labour market outcomes across visa categories relative to the family class immigrants. Three types of outcomes are discussed: labour force participation, employment and earnings.

In the following analysis the employment and weekly earnings refer to the reference week. However, the survey doesn't provide any reference week labour force participation (LFP) information. For those not employed during the reference week survey either reports any previous employment for a time window defined for Wave 1 (Wave 2) as the time between landing (Wave 1 interview) and Wave 1 interview (Wave 2 interview) or the main activity for those who never worked during this time window. In this study labour force participant is thus defined as someone who satisfies one of the following three conditions: (i) employed during the reference week, (ii) not employed during reference week but reported previous employment, or (iii) reported that main activity was "looking for work or establishing business"[19],[20].

5.1 Mean Outcomes: Labour Force Attachment and Earnings

This section first presents average outcomes by visa class without any controls for either demographic or human capital characteristics. These results help answer the question whether large differences in observed human capital characteristics across visa classes documented in the previous sections are reflected in the labour market outcomes. The results also provide a benchmark for the latter analyses that explore the role of the observed human characteristics on the outcomes.

Pooling observations from Waves 1 and 2 the following model is estimated:

$$Y_{it} = \alpha_0 + \alpha_1 X_i^1 + \alpha_2 X_{it}^2 + \alpha_3 X_{it}^3 + a_i + \varepsilon_{it} \qquad (1)$$

[19] Individuals with missing labour force or employment status or those who decline reporting their wages are dropped from the sample. This results in a total of 394 observations being dropped out of 7319 observations.

[20] Appendix Table A.2 presents mean labour market outcomes for each visa class using the LSIC data, as well as, similarly defined outcomes for the resident population using monthly Labour Force Surveys (LFS), adjusted to reflect the demographic characteristics and geographic distribution of immigrants. Resident population outcomes are presented mainly to provide a benchmark to assess broad patterns in the economy.

where Y_{it} is the labour market outcome for individual i at time period t, X^1 is a set of dummy variables for visa classes, X^2 is a set of dummies for year effects and X^3 is a set of variables that includes years since landing (YSM) and YSM interacted with visa class dummies[21]. For labour force participation and employment outcomes the functional form is a probit while for the third outcome it is a log-linear specification with log earnings as the dependant variable. Given the panel nature of the data population averaged models that allow for unobserved heterogeneity are estimated where a_i is the individual specific unobserved effect[22]. Estimation results are presented in Table 6 separately for PAs and their dependants by panels A and B respectively. For LFP and employment outcomes marginal effects are reported and robust standard errors are presented for all three outcomes in parenthesis.

Among males, labour force participation rates of skilled worker PAs and dependants are not statistically different from their family class counterparts, employment rates are lower (8 and 27 percentage points respectively), and earnings are substantially higher (about 30 % and 49 % respectively). All visa classes register gains in participation rates and earnings levels as indicated by the estimated ysm coefficients. The ysm profiles for skilled workers are in general not statistically different from that of family class with the exception of skilled worker class dependants having a steeper profile. Among females, labour force participation rates are higher for both PAs and dependants compared to their counterparts in the family class (24 and 9 percentage points respectively), employment rates are similar, and earnings are substantially higher for PAs but not for the dependants. Not all groups of females register gains in these outcomes over time, however, when they do, such as in the case of earnings for PAs, these gains are similar across visa types.

[21] Using the LSIC survey it is possible to calculate "time since landing" (landing referring to officially becoming an immigrant) which may be different than time since arrival as some individuals may already be living in the country before adjusting their status. These potential differences are important for assessing the relative performance of immigrants across classes since both the fraction that adjusts status within a visa class and time spent prior to adjusting the status may vary across visa categories. Available evidence suggests that there are very few skilled workers or business class immigrants that adjust status (less than 2%) while almost half of refugees do so. Refugees adjusting their status are the ones that applied for refugee status within Canada and survey's sampling design excludes these individuals. Therefore, the small number of remaining individuals that adjust their status among skilled workers and business class is unlikely to bias overall results. As a further check multivariate models were re-estimated by excluding from the sample individuals who ever lived in Canada before becoming permanent residents. Results following this exclusion are very similar to those presented in the paper.

[22] Population averaged models allow individuals' error terms to be correlated over time. However, the heterogeneity term is assumed to be independent of individual characteristics. The estimated within-group correlation was high suggesting the use of models that allows for heterogeneity. Fixed effects estimation is not possible in the probit context and random effects estimation couldn't produce reliable estimates for probit models as the results were very sensitive to the number of quadrature points. Random effects models for earnings outcomes are estimated with very similar results to those reported here from population averaged models.

These results show that both male and female immigrants improved their labour market outcomes substantially over an 18 month period between the two interviews during which Canadian resident population outcomes were stable as the last row of Panels A to D of Appendix Table A2 shows. Interestingly, much higher schooling levels for skilled workers relative to family class documented in the previous sections are not translated into more favourable outcomes especially for PA males at the LFP and employment margins. It is, however, important to note the difference between male and female skilled workers that shows similar participation rates relative to family class for males but much higher ones for females. These differences between male and female skilled workers may reflect family labour supply decisions where males may be investing in human capital while females are taking jobs to support the family. This kind of "temporary" phenomenon is analyzed for immigrants in Australia by Cobb-Clark et al. (2005).

Results for labour force participation and employment outcomes also show that the groups that have the least favourable outcomes at entry register the largest gains. For example, refugees start out with the lowest participation rates but have the fastest growth in participation. Similarly business class males start out with the lowest employment rate but have the highest growth rate which helps reduce the gaps over the two year period. This inverse relation, however, is not observed for weekly earnings, hence, the gaps persist two years after arrival.

5.2 Role of Human Capital Characteristics

Previous sections documented large differences in human capital characteristics and labour market outcomes across visa classes. This section analyzes the role of demographic and human capital characteristics in explaining the variation in the labour market outcomes. An extension of the specification in equation (1) is estimated that pools data from Waves 1 and 2:

$$Y_{it} = \alpha_0 + \alpha_1 X_i^1 + \alpha_2 X_{it}^2 + \alpha_3 X_{it}^3 + X_{it}^4 + a_i + \varepsilon_{it} \qquad (2)$$

where X^1, X^2 and X^3 are identical to those in equation (1). X^4 are the additional controls that include years of schooling, experience and experience squared, controls for English and French speaking, writing and reading ability, dummy variables for region of birth, region and metropolitan city of residence, marital status, province/city, and sex specific unemployment rate at the time of interview[23]. Visa class dummies in specification (2) capture differences in outcomes across classes

[23] The language controls are entered as continuous variables from 1 to 4, 1 being the lowest and 4 the highest language ability. Entering language variables as dummy variable sets results in very similar results. An alternative

after controlling for these characteristics where family class is the omitted category. Similar to the estimation of equation (1) probit models are estimated for LFP and employment outcomes while for earnings a log linear model is estimated[24]. The results of this estimation are presented in Table 7 for PAs and Table 8 for dependants. For binary outcomes marginal effects are presented.

A comparison of the estimated coefficients for visa types in Tables 7 and 8 to the Panels A and B of Table 6 respectively shows that introduction of these additional controls has limited explanatory power for explaining differences in entry outcomes across visa classes. For example, relative to the family class 33 percentage points LFP disadvantage for male PA refugees in Panel A of Table 6 drops to 27 percentage points in Table 7 with the addition of controls. Similarly, for the earnings outcome of the skilled worker class immigrants 30 % advantage among male PAs relative to the family class is reduced to 15 %, and the 43 % advantage for females is reduced to 35 %. In other words, for PAs addition of controls explains about half of the earnings difference between skilled worker and family class males and about 1/5th of the difference for females. Also, after controlling for demographic and human capital characteristics ysm profiles largely remain unchanged. These results are consistent with the findings of De Silva (1997) for Canada who reports that controlling for immigrant characteristics accounts for only a small portion of the earnings differential among various classes.

The returns to various characteristics are of special interest as they indicate how these factors, some of which assessed during the selection process, are related to future labour market success. Tables 7 and 8 report the effects of schooling, experience and language variables. Experience is almost all foreign experience given the immigrants in the sample have been in the country at most about 2 years. The returns to experience is either zero or in some cases negative. Similar results have been reported for recent immigrant cohorts to Canada by Aydemir and Skuterud (2005). Schooling has

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specification also replaced years of schooling variable with dummy variables indicating highest level of educational attainment and results were very similar to those presented here. Given the interest in this paper on the importance of factors assessed by the point system in predicting future outcomes, language ability and schooling as reported in the 6 month interview are used regardless of when the outcomes are measured. All other controls are as of the time of the interview corresponding to the outcome.

[24] The earnings outcomes presented are based on OLS regressions that do not correct for selection into labour force. This selectivity may be important particularly for females. To correct for sample selectivity in panel data context I implemented the maximum likelihood estimator proposed by Zabel (1992), however, the estimation could not be carried out as the log likelihood in this case is not globally concave and iterations occasionally break down in this estimation as noted by Limdep software manual (p. E23-27). Alternatively, to get a sense of possible biases for earnings outcome I estimated earnings regressions for each cross-section and produced parameter estimates without correction for selectivity and with correction for selectivity using a Heckit procedure. The conclusions from this cross-sectional analysis is that (i) returns to human capital characteristics, such as schooling and experience, are not sensitive to sample selection, and (ii) unexplained differences between classes still remain, and in some cases become larger, after the correction for sample selection.

either zero or negative effect on participation and employment outcomes and a small positive effect on earnings[25]. It is important to note that negative effects of schooling and experience on participation and employment are mostly observed for males but not for females, providing some support to possible family investment decisions where males invest in skill upgrading while females work. Both experience and schooling have large weights in selection decisions, yet over the short term neither seems to lead to any significant advantage in the labour market. This result should, however, be interpreted with caution. Immigrants with higher levels of schooling may be facing credentials recognition problems in the short term. Following possible investments in human capital and going through credentials recognition processes the value of these characteristics may significantly rise over the long run.

Tables 7 and 8 also report returns to language skills. The point system evaluates speaking, writing and reading abilities separately in both official languages, English and French. For PAs coefficient estimates for speaking ability indicate a positive impact on labour market outcomes, while reading and writing abilities mostly have no significant effect[26]. This suggests that speaking may be the most important dimension of language ability for labour force participation decisions, employment and eventually for earnings. This stresses the importance of speaking ability for both immigrant selection and language training services.

Above results show that the three characteristics assessed by the point system, education, experience and language do not have significant returns in the short run. Therefore, the contribution of these observable characteristics to explaining the differences in economic performance between visa classes is modest. Large unexplained differences that remain after controlling for demographic and human capital characteristics reflect the importance of unobserved differences in immigrant characteristics across visa classes. Factors such as quality of human capital characteristics, demand for them in the host country labour market and access to networks may be playing crucial roles in labour market outcomes. Family class immigrants given their access to family networks, for example, may have advantages over skilled workers since they can use these networks for richer and more reliable information about the host country labour market while shaping the migration decisions and to overcome barriers in the labour market post migration.

[25] Very similar results for the impact of schooling are also found in specifications estimated using only a single wave of data.
[26] Interacting French speaking abilities with a dummy for the French speaking province of Quebec does not change these conclusions.

6. Conclusions

This paper studies characteristics and short term labour market outcomes of immigrants across visa categories in the Canadian context. There are three main findings. First, the paper documents that immigrants selected for their skills have much more favourable human capital characteristics. This is a result of the point system that generates a higher skilled immigrant flow primarily by selecting more skilled immigrants within-countries of origin rather than changing the country of origin composition towards countries with higher average skills.

Second, in addition to directly changing the skill distribution by choosing higher skilled principal applicants the point system affects skills also indirectly through higher skilled spouses. The positive assortative matching among couples that leads to this result is found to be much stronger among skilled workers than other visa classes.

Third, while favourable selection in observed characteristics for skilled worker principal applicants result in modest earnings advantages, it does not lead to higher participation and employment rates in the short term. This is because schooling and experience, almost all obtained abroad in this sample, have either zero or negative effect on labour force participation and employment, and schooling has a small positive effect on weekly earnings. The fact that two years after arrival these characteristics do not significantly alter labour market outcomes indicates major difficulties in transfer of foreign human capital. However, the long term impacts of both schooling and experience can potentially be different than the short term ones if immigrants may be investing in human capital or going through credentials recognition processes. Also, after controlling for detailed demographic and human capital characteristics large unexplained differences in labour market outcomes remain indicating the important role of unobserved characteristics.

While the results in this paper underline that immigrant selection based on skill requirements similar to the point system may be very effective in changing the skill composition of immigrants, it is important to note that these types of screening mechanisms are usually limited to such observable characteristics as age, education, experience, and occupation. They are largely unable to affect selection in unobservables that are important in determining the quality and relevance of human capital immigrants bring to the host country. This may result in skill transferability problems or mismatches between the demand for specific skills in the host country and supply of them through

immigration. The severity of these problems determines the extent to which host countries can benefit from immigrant selection mechanisms.

Table 1 – Distribution of Immigrants across Visa Categories

	Age 15+	Age 25-65		
	Both sexes	Both sexes	Male	Female
Family class	27.0	20.4	14.9	26.1
Skilled worker class	60.6	69.0	74.8	63.1
Business class	5.7	5.0	4.3	5.7
Refugee class	6.7	5.6	6.0	5.2

Table 2 – Educational and Language Ability by Visa Category and Gender

	Male				Female			
	Family Class	Skilled Worker	Business Class	Refugees	Family Class	Skilled Worker	Business Class	Refugees
Panel A - Education								
HS dropout	0.25	0.01*	0.04*	0.16*	0.28	0.02*	0.15*	0.33
HS or trade school grad	0.26	0.03*	0.24	0.32	0.19	0.07*	0.29*	0.34*
Some post-sec	0.19	0.10*	0.21	0.28*	0.19	0.20	0.24	0.19
Bachelor's degree	0.21	0.53*	0.37*	0.19	0.24	0.47*	0.28	0.12*
Post-grad or professional degree	0.10	0.34*	0.13	0.05*	0.10	0.24*	0.04*	0.02*
Total	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Years of schooling	12.8	16.7*	14.9*	13.2	12.3	15.7*	13.4*	11.2*
Panel B – Fraction with High Language Ability								
English speaking	0.47	0.74*	0.51	0.40	0.41	0.61*	0.29*	0.18*
English writing	0.57	0.79*	0.58	0.49*	0.49	0.67*	0.38*	0.24*
English reading	0.61	0.87*	0.65	0.54	0.51	0.76*	0.45	0.27*
French speaking	0.07	0.16*	0.05	0.10	0.06	0.12*	0.03	0.06
French writing	0.07	0.16*	0.04	0.09	0.08	0.13*	0.03*	0.09
French reading	0.09	0.18*	0.06	0.11	0.09	0.16*	0.04*	0.10

Notes: Panel A presents fraction by highest level of educational attainment and mean years of schooling; Panel B presents fraction of immigrants with 'high' language ability where 'high' language ability refers to responses that indicate the language ability being well, very well or mother tongue.

* indicates that for a given row in the table within each gender group differences relative to family class are significant at 5 % level.

Table 3 – Decomposition of Education Differential between Skilled Worker and Family Classes into *within* and *across* Region of Origin Components

	Panel A – All immigrants				Panel B – Principal Applicants		Panel C - Dependants	
	Region of Origin Groups			Country of Origin Groups	Region of Origin Groups		Region of Origin Groups	
	Male	Female	Total	Total	Male	Female	Male	Female
Raw differential relative to Family class (R)	3.98	3.49	3.85	4.42	4.16	3.18	2.27	4.69
Within (W)	3.69	3.15	3.50	4.20	3.81	3.14	2.08	4.10
(Due to difference in mean education for a given origin)								
Across (A)	0.29	0.34	0.35	0.22	0.35	0.04	0.18	0.59
(Due to difference in origin composition)								
% Within (W/R)	92.7	90.3	91.0	95.0	91.6	98.8	91.9	87.5
% Across (A/R)	7.3	9.7	9.0	5.0	8.4	1.2	8.1	12.5

Table 4 – Educational Distribution among Principal Applicants and Spouses

	Male				Female			
	Family Class	Skilled Worker	Business Class	Refugees	Family Class	Skilled Worker	Business Class	Refugees
Panel A – Principal Applicants								
HS dropout	0.25	0.01*	0.03*	0.17*	0.18	0.00*	0.09	0.34*
HS or trade school grad	0.26	0.03*	0.26	0.32	0.20	0.02*	0.21	0.40*
Some post-sec	0.18	0.09*	0.20	0.29*	0.22	0.11*	0.24	0.15
Bachelor's degree	0.21	0.54*	0.38*	0.18	0.28	0.51*	0.39	0.08*
Post-grad or prof. degree	0.09	0.35*	0.13	0.05*	0.12	0.35*	0.07	0.03*
Total	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Years of schooling	12.69	16.85*	14.90*	13.09	13.45	16.63*	13.16	11.04*
Panel B - Spouses								
HS dropout	0.13	0.02*	0.03	0.28*	0.40	0.03*	0.12*	0.32*
HS or trade school grad	0.23	0.07*	0.25	0.34	0.22	0.10*	0.34*	0.27
Some post-sec	0.23	0.18*	0.28	0.13*	0.18	0.23*	0.22	0.24*
Bachelor's degree	0.29	0.49*	0.31	0.16*	0.17	0.45*	0.28*	0.15
Post-grad or prof. degree	0.12	0.24*	0.13	0.10	0.04	0.19*	0.04	0.02*
Years of schooling	13.68	15.95*	14.44	12.21*	10.75	15.57*	13.44*	11.59*

Note: Table reports the years of schooling and the fraction by highest level of educational attainment within a visa category.
Dependant sample consists of only spouses of principal applicants.
* indicates that within each gender group for a given level of education differences relative to family class are significant at 5 % level.

Table 5 – Fraction of Principal Applicants Married to a Spouse with Equal or Higher Educational Attainment, by Visa Category

Educational Attainment of Principal Applicant	Family Class	Skilled Worker Class	Business Class	Refugees
Panel A – Age 25-65				
HS dropout	1.00	1.00	1.00	1.00
HS or trade school grad	0.71	0.86	0.80	0.74
Some post-sec	0.70	0.77	0.71	0.55
Bachelor's degree	0.53	0.67	0.50	0.56
Post-grad or prof. degree	0.27	0.37	0.25	0.14
Panel B- Age 25-45				
HS dropout	1.00	1.00	1.00	1.00
HS or trade school grad	0.86	0.87	0.87	0.74
Some post-sec	0.76	0.78	0.66	0.57
Bachelor's degree	0.56	0.67	0.52	0.60
Post-grad or prof. degree	0.27	0.38	0.26	0.16
Panel C - Age 25-45, Region of Birth Asia				
HS dropout	1.00	1.00	--	--
HS or trade school grad	0.84	0.96	--	--
Some post-sec	0.71	0.85	--	--
Bachelor's degree	0.55	0.67	--	--
Post-grad or prof. degree	0.17	0.33	--	--

Note: In Panel C the sample sizes for Business Class and Refugees are very small, therefore, no result is presented.

Table 6 – Assimilation Profiles, Marginal Effects for LFP and Employment

	LFP		Employment		Log Earnings	
	Male	Female	Male	Female	Male	Female
Panel A - Principal Applicants						
Skilled worker	0.02	0.24*	-0.08*	-0.08	0.30*	0.43*
	(0.02)	(0.04)	(0.03)	(0.05)	(0.04)	(0.09)
Business class	-0.10	0.07	-0.57*	-0.35	0.21	-0.38
	(0.06)	(0.13)	(0.06)	(0.19)	(0.20)	(0.35)
Refugee class	-0.33*	-0.37*	-0.04	0.03	-0.14*	-0.23
	(0.05)	(0.07)	(0.07)	(0.14)	(0.07)	(0.13)
Ysm	0.08*	0.10	-0.04	0.06	0.15*	0.33*
	(0.03)	(0.06)	(0.04)	(0.07)	(0.05)	(0.11)
Ysm*Skilled worker	0.00	0.01	0.00	0.10*	0.01	-0.06
	(0.02)	(0.03)	(0.03)	(0.04)	(0.03)	(0.07)
Ysm*Business class	0.01	0.06	0.25*	0.23	0.05	0.21
	(0.03)	(0.11)	(0.05)	(0.13)	(0.11)	(0.27)
Ysm*Refugee class	0.09*	0.11*	-0.01	-0.02	-0.04	-0.01
	(0.02)	(0.04)	(0.05)	(0.09)	(0.04)	(0.10)
N	6130	2846	5156	1792	3778	1302
Panel B - Dependants						
Skilled worker	0.19	0.09*	-0.27*	0.13	0.49*	-0.08
	(0.11)	(0.04)	(0.08)	(0.08)	(0.18)	(0.10)
Business class	-0.20	-0.06	0.28*	0.05	0.54	-0.17
	(0.20)	(0.06)	(0.05)	(0.11)	(0.34)	(0.30)
Refugee class	-0.41*	-0.34*	-0.02	0.01	-0.01	0.15
	(0.17)	(0.07)	(0.31)	(0.18)	(0.32)	(0.20)
Ysm	0.16	0.04	-0.21	0.06	0.27	0.16
	(0.09)	(0.05)	(0.14)	(0.09)	(0.18)	(0.14)
Ysm*Skilled worker	-0.08	0.09*	0.24*	0.01	-0.18	0.20*
	(0.06)	(0.03)	(0.10)	(0.06)	(0.11)	(0.10)
Ysm*Business class	0.07	0.06	-0.10	0.03	-0.16	0.17
	(0.11)	(0.04)	(0.11)	(0.08)	(0.22)	(0.25)
Ysm*Refugee class	0.08	0.22*	0.01	0.10	-0.25	-0.23
	(0.08)	(0.06)	(0.21)	(0.11)	(0.23)	(0.16)
N	804	4070	628	2005	432	1351

Notes: The reference group is family class immigrants and regressions include dummy variables for year effects but not other control variables. Results from population averaged models. * indicates significance at 5 % level, robust standard errors reported are reported in parentheses.

Table 7 – Principal Applicants, Assimilation Profiles and Returns to Human Capital Characteristics, Marginal Effects for LFP and Employment

	LFP		Employment		Log Earnings	
	Male	Female	Male	Female	Male	Female
Skilled worker	0.04	0.13*	-0.06	-0.09	0.20*	0.30*
	(0.03)	(0.04)	(0.04)	(0.06)	(0.05)	(0.09)
Business class	0.01	0.09	-0.50*	-0.38	0.17	-0.20
	(0.04)	(0.12)	(0.08)	(0.22)	(0.19)	(0.34)
Refugee class	-0.27*	-0.34*	-0.06	0.04	-0.12	-0.18
	(0.06)	(0.09)	(0.07)	(0.14)	(0.07)	(0.15)
Ysm	0.09*	0.12*	-0.04	0.07	0.15*	0.35*
	(0.03)	(0.06)	(0.05)	(0.07)	(0.05)	(0.11)
Ysm*Skilled worker	-0.02	0.02	0.00	0.11*	0.01	-0.04
	(0.02)	(0.03)	(0.03)	(0.04)	(0.03)	(0.07)
Ysm*Business class	0.00	0.05	0.26*	0.25	0.03	0.16
	(0.03)	(0.12)	(0.05)	(0.14)	(0.11)	(0.27)
Ysm*Refugee class	0.06*	0.13*	-0.01	-0.02	-0.05	0.03
	(0.02)	(0.05)	(0.05)	(0.10)	(0.05)	(0.11)
Years of schooling	-0.01*	0.00	-0.01*	0.00	0.01	0.02
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)
Experience	0.00	0.00	-0.01*	0.01	-0.01*	-0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
Exp. squared/100	-0.01*	-0.03*	0.01	-0.02*	0.01	0.00
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
English speaking	0.00	0.09*	0.01	0.04	0.09*	0.06
	(0.01)	(0.03)	(0.01)	(0.03)	(0.02)	(0.05)
English reading	0.01	0.00	0.04*	-0.07*	0.01	-0.05
	(0.01)	(0.03)	(0.02)	(0.03)	(0.03)	(0.06)
English writing	0.01	-0.07*	-0.02	-0.01	0.03	0.08
	(0.01)	(0.03)	(0.02)	(0.03)	(0.03)	(0.06)
French speaking	0.03	0.09	-0.01	0.02	-0.05	0.04
	(0.02)	(0.06)	(0.03)	(0.04)	(0.05)	(0.11)
French reading	0.00	0.04	0.04	0.01	0.05	0.10
	(0.02)	(0.05)	(0.03)	(0.04)	(0.04)	(0.10)
French writing	0.01	-0.01	-0.04	-0.04	-0.03	-0.10
	(0.02)	(0.08)	(0.03)	(0.05)	(0.06)	(0.13)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
N	6126	2846	5152	1792	3775	1302

Notes: Results from population averaged models. Each model includes dummy variables for region of birth, region and metropolitan city of residence, and marital status, province/city and sex specific unemployment rate at the time of interview and at the time of arrival (monthly rates) and dummy variables for year effects. The reference group for visa category is family class immigrants. * indicates significance at 5 % level, robust standard errors are reported in parentheses.

Table 8 – Dependants, Assimilation Profiles and Returns to Human Capital Characteristics, Marginal Effects for LFP and Employment

	LFP		Employment		Log Earnings	
	Male	Female	Male	Female	Male	Female
Skilled worker	0.10	-0.11	-0.28*	0.03	0.12	-0.21
	(0.13)	(0.06)	(0.07)	(0.10)	(0.25)	(0.17)
Business class	-0.21	-0.15*	0.18*	-0.06	0.28	-0.16
	(0.20)	(0.07)	(0.07)	(0.14)	(0.33)	(0.32)
Refugee class	-0.37	-0.39*	0.01	-0.16	-0.36	0.29
	(0.28)	(0.08)	(0.33)	(0.24)	(0.41)	(0.26)
Ysm	0.17	0.07	-0.22	0.03	0.09	0.19
	(0.10)	(0.05)	(0.15)	(0.09)	(0.19)	(0.15)
Ysm*Skilled worker	-0.09	0.08*	0.24*	0.02	-0.08	0.23*
	(0.07)	(0.03)	(0.12)	(0.06)	(0.13)	(0.11)
Ysm*Business class	0.09	0.04	-0.02	0.04	0.00	0.19
	(0.11)	(0.04)	(0.15)	(0.09)	(0.20)	(0.24)
Ysm*Refugee class	0.07	0.21*	-0.13	0.16	-0.09	-0.25
	(0.09)	(0.07)	(0.22)	(0.12)	(0.26)	(0.17)
Years of schooling	0.00	-0.01*	0.00	0.00	-0.01	-0.01
	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)
Experience	0.01	0.00	0.02*	0.01*	0.02	-0.02*
	(0.01)	(0.00)	(0.01)	(0.00)	(0.02)	(0.01)
Exp. squared/100	-0.04	-0.02*	-0.06*	-0.03*	-0.09	0.04
	(0.02)	(0.01)	(0.02)	(0.01)	(0.05)	(0.03)
English speaking	0.01	0.06*	-0.04	0.03	0.04	0.06
	(0.03)	(0.02)	(0.04)	(0.02)	(0.06)	(0.05)
English reading	-0.05	-0.06*	0.01	0.01	0.03	0.11*
	(0.04)	(0.03)	(0.05)	(0.03)	(0.10)	(0.05)
English writing	0.02	0.05*	0.05	0.00	0.08	-0.09
	(0.03)	(0.03)	(0.05)	(0.02)	(0.09)	(0.05)
French speaking	0.05	0.09*	0.07	-0.06	0.04	0.03
	(0.05)	(0.04)	(0.10)	(0.04)	(0.13)	(0.07)
French reading	-0.02	0.01	0.13	0.00	-0.12	0.17
	(0.05)	(0.04)	(0.07)	(0.05)	(0.14)	(0.10)
French writing	-0.04	-0.01	-0.22	0.05	-0.23	-0.10
	(0.06)	(0.05)	(0.13)	(0.05)	(0.16)	(0.10)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
N	802	4064	626	2000	431	1346

Notes: Results from population averaged models. Each model includes dummy variables for region of birth, region and metropolitan city of residence, and marital status, province/city and sex specific unemployment rate at the time of interview and at the time of arrival (monthly rates) and dummy variables for year effects. The reference group for visa category is family class immigrants. * indicates significance at 5 % level, robust standard errors are reported in parentheses.

Table A.1 – Descriptive Statistics for Demographic and Human Capital Characteristics

(Cont'd on next page)

Variable name	Male				Female			
	Family Class	Skilled Worker	Business Class	Refugees	Family Class	Skilled Worker	Business Class	Refugees
Age	41.1	35.5	44.6	36.8	40.1	34.4	41.4	37.9
Married	93.9	81.9	94.3	75.5	88.0	87.9	92.6	83.0
Single	3.5	16.9	4.9	21.5	1.8	9.3	3.9	8.9
Widow. Div or Separated	2.7	1.2	0.8	3.0	10.2	2.7	3.5	8.1
Language ability								
English-speaking	2.3	2.7	2.2	2.1	2.1	2.5	1.9	1.6
English-reading	2.5	2.9	2.5	2.3	2.3	2.7	2.2	1.8
English-writing	2.4	2.8	2.4	2.2	2.3	2.6	2.1	1.7
French-speaking	1.2	1.4	1.1	1.3	1.2	1.3	1.1	1.2
French-reading	1.2	1.4	1.2	1.3	1.2	1.4	1.1	1.3
French-writing	1.2	1.4	1.1	1.2	1.2	1.3	1.1	1.3
Improved English	88.5	89.1	82.0	88.7	81.9	90.3	89.1	82.8
Improved French	10.2	14.8	9.0	20.3	12.5	14.4	9.1	20.9
Region of origin								
N. America	2.9	0.7	0.0	0.0	2.9	0.7	1.0	0.1
South, Cent. Ame.	5.5	2.6	1.6	5.3	5.9	3.2	0.6	6.9
Carib., Bermuda	5.7	1.5	0.0	0.0	4.4	1.4	1.0	0.7
W., N. Europe	4.6	5.0	12.0	0.1	2.6	5.1	7.4	0.7
E. Europe	2.3	10.3	2.2	0.9	6.7	10.0	2.0	1.1
S. Europe	2.1	1.4	1.2	15.5	3.0	2.4	0.7	16.6
Africa	5.7	11.2	5.5	26.5	6.0	8.1	3.3	17.5
W., Cent. Asia. Middle East	7.4	6.2	17.3	31.4	6.1	6.0	9.5	40.6
E. Asia	9.6	29.8	47.7	1.2	14.1	34.3	59.9	1.0
Southeast Asia, Oceania	13.8	8.0	3.2	17.2	11.3	9.7	1.7	1.2
South Asia	40.3	23.3	9.3	1.9	37.0	19.1	13.0	13.6

Table A.1– Descriptive Statistics Cont'd

Variable name	Male				Female			
	Family Class	Skilled Worker	Business Class	Refugees	Family Class	Skilled Worker	Business Class	Refugees
Region of Residence								
Atlantic	0.5	0.6	0.8	1.9	0.3	0.7	1.1	3.0
Quebec	11.2	19.1	8.3	21.5	12.3	16.2	7.7	24.1
Ontario	52.7	58.8	45.0	38.4	58.2	58.8	37.7	45.2
Manitoba	3.1	0.8	0.9	9.4	2.3	0.6	1.5	4.5
Saskatchewan	0.7	0.3	0.0	0.7	0.3	0.4	0.0	1.1
Alberta	10.3	7.1	9.2	15.7	7.9	8.1	4.3	9.5
B.C.	21.6	13.3	35.9	12.4	18.7	15.2	47.8	12.6
City of residence								
Toronto	42.7	48.5	37.4	21.6	46.7	48.3	32.0	26.0
Vancouver	15.2	12.1	31.3	10.6	14.7	14.2	43.8	10.8
Montreal	9.9	17.5	7.3	10.8	10.5	14.7	7.2	13.8
Calgary	5.6	4.4	5.4	7.8	4.7	5.0	1.4	6.1

Note: Sample consists of individuals age 25-65 at Wave 2. All characteristics are as of the time of first interview (6-month interview) except "Improved English before" which is only asked at the second interview. For marital status, region of origin, region of residence and city of residence the table presents percentages. Mean values are presented for language variables and age where the language variables are coded as continuous variables from 1 to 4, 1 being the lowest and 4 the highest language ability. The responses in the survey that correspond to each of these values for language ability are: 1 refers to 'poor' or no ability, 2 refers to 'fairly well', 3 refers to 'well' or 'very well' and 4 refers to 'mother tongue'.

Appendix I – Point System

According to the rules of the point system that was in effect for the immigrant cohort in this study points are calculated based on 10 factors (maximum points for each factor indicated in parenthesis): age (10), occupation (10), arranged employment (10), demographic factor (10), specific vocational preparation (18), work experience (8), language ability (15), education (16), personal suitability (10), and relatives in Canada (5). The pass mark was set at 70 points.

Demographic factor is set by the government and doesn't vary by immigrant characteristics. Specific vocational preparation points vary by occupation depending on the length of training, education, and/or apprenticeship required for that occupation. Occupation points depend on the perceived demand for that occupation in Canada, whereas personal suitability factor is determined through an interview conducted by a visa officer and aims to assess "adaptability, motivation, initiative, and resourcefulness" of the applicant.

Education factor allocated higher points with increasing education levels: 0 points for less than secondary school, 5 points for completed secondary school that doesn't allow for entrance to a university and doesn't include trade or occupational certification, 10 points for completed secondary school and the program provides entrance to university or includes trade or occupational certification, 10 points for completed post-secondary program that required for admission secondary schooling, 13 points for community college/trade school diploma or apprenticeship with at least one year of classroom studies, 15 points for completed university degree with at least three years of full time study, 16 points for a second or third level university degree.

Table A.2– Mean Labour Market Outcomes by Gender and Visa Category

	A. Labour Force Participation				B. Employment to Population Ratio			
	Male		Female		Male		Female	
	Wave 1	Wave 2	Wave 1	Wave 2	Wave 1	Wave 2	Wave 1	Wave 2
Family class	0.84	0.90	0.45	0.58	0.67	0.76	0.32	0.39
Skilled Worker	0.87	0.91	0.54*	0.73*	0.61*	0.71*	0.40*	0.55*
Business Class	0.74*	0.83	0.34*	0.53	0.31*	0.67*	0.22*	0.37
Refugees	0.55*	0.79*	0.17*	0.43*	0.41*	0.63*	0.12*	0.32*
All immigrants	0.84	0.90	0.49	0.66	0.59	0.71	0.35	0.48
All residents	0.92	0.92	0.80	0.80	0.86	0.86	0.75	0.75

	C. Weekly Earnings (those with positive earnings)				D. Weekly Earnings (including zero earnings)			
	Male		Female		Male		Female	
	Wave 1	Wave 2	Wave 1	Wave 2	Wave 1	Wave 2	Wave 1	Wave 2
Family class	436	539	329	615	284	403	103	237
Skilled Worker	665*	760*	426*	540	398*	524*	169*	286
Business Class	744*	810*	331	472	158*	348	52*	121
Refugees	367	441	258	357	152*	277*	32*	113
All immigrants	614	706	397	548	355	482	137	254
All residents	963	965	700	734	670	665	464	475

Notes: 1. Labour force participation information for the resident population in the LFS samples refer to participation during the reference week, hence, different from the LSIC definition.
2. LSIC includes self-employment earnings while the LFS doesn't. However, the mean earnings with and without self-employment earnings are very similar in the LSIC sample within visa classes with the exception of business class immigrants. Therefore, earnings and employment to population ratios are roughly comparable between immigrants and the resident population.
3. The resident population results are derived from monthly LFS micro data files by the author. In each case these are weighted averages for the resident population that adjust the distribution of resident population to that of the corresponding immigrant group by month of interview, geographic location, schooling and age group. Specifically, for example, the Unemployment rate (UR) is defined as:

$$UR^j = \sum_t \sum_g \sum_e \sum_a \alpha^j_{tgea} UR^j_{tgea}$$

where *j* refers to gender, *t* refers to month of interview, *g* refers to province and city of residence (cities that are controlled for are Toronto, Montreal, Vancouver and Calgary), *e* refers to 5 education groups (HS dropout, HS or trade school graduate, Some post-secondary, Bachelor's degree, Post-grad or professional degree) and *a* refers to 4 age groups (25 to 34, 35 to 44, 45 to 54, 55 to 65). For the 6 month interview, for example, immigrants in the LSIC were interviewed at different months giving some variation across time *t*. Similarly there is variation among immigrants by geography, education and age group conditional on month of interview. Resident population unemployment rates UR_{tgea} from the LFS for each cell defined by (t, g, e, a) are weighted by terms α_{tgea}, the fraction of immigrants in that cell for a given Wave of the LSIC. Therefore only LFS surveys that correspond to the months in which an LSIC interview was conducted are used. Resident population means corresponding to each Wave of LSIC are calculated separately. Other outcomes presented for the resident population are defined similarly. No adjustment for inflation is made for wages either in the immigrant samples from the LSIC or resident samples from the LFS as the two waves are not far apart.
(*) indicates that differences relative to the family class in that Wave are significant at 5 % level

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